



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,982	06/20/2003	Jeffrey S. Lille	SA9-99-091US2 , 38.02D	9104
24033	7590	08/14/2006	EXAMINER	
KONRAD RAYNES & VICTOR, LLP 315 S. BEVERLY DRIVE # 210 BEVERLY HILLS, CA 90212			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,982

Applicant(s)

LILLE, JEFFREY S.

Examiner

Paul D. Kim

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 30-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-15 and 30-38 is/are rejected.
- 7) ☒ Claim(s) 34-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This office action is a response to the amendment filed on 6/7/2006.

Claim Objections

1. Claims 9-15 and 38 are objected to because of the following informalities:

As per claim 9 before the phrase "chloride material" as recited in line 13, insert a phrase --the--.

As per claim 38 before the phrase "metal carbide" as recited in line 3, change the phrase "a" to --the--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-8, 15 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ananth et al. (US PAT. 5,708,540) in view of Tsukamoto (US PAT. 5,781,376).

Ananth et al. teach a process of making a slider comprising steps of: providing a slider body (SL-I); forming at least one trench in a surface of the slider (as shown in Fig. 4'); and forming a structure (B, silicon carbide as per claims 2 and 31) in the at least one

Art Unit: 3729

trench as shown in Fig. 4' (see also col. 9, line 31 to col. 10, line 50). Ananth et al. also teach that the slider is made of TiC, Al₂O₃ or the like.

However, Ananth et al. fail to teach that the slider is made of crystal silicon material. Tsukamoto teaches a process of making a slider, which is made of crystalline silicon in order to prevent head-medium attraction, to reduce static friction coefficient and dynamic friction coefficient in a low speed range (col. 3, lines 54-59). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a material of the slider of Ananth et al. by crystalline silicon as taught by Tsukamoto in order to prevent head-medium attraction, to reduce static friction coefficient and dynamic friction coefficient in a low speed range.

As per claims 3 and 33 according to Fig. 4' of Ananth et al., the thin film transducer (at least a read/write element) is formed at trailing edge. However, Ananth et al. do not teach whether the thin film transducer is formed after or before the structure is formed. Even though Ananth et al. silent the producing method for the thin film transducer either after or before the structure is formed, it would be obvious and well known at the time the invention was made to a person having ordinary skill in the art to form the thin film transducer after the formation of the slider including the structure in order to prevent a damage of the thin film transducer from thermally during the slider manufacturing process. As set forth above, the slider and the structure of Ananth et al. are made by a material of matching thermal expansivity.

As per claim 5 Ananth et al. also teach that at least one trench is formed by etching (col. 13, lines 7-15).

As per claims 6 and 8 Ananth et al. also teach that a layer (epoxy) can be provided between the slider and the carbide structure in order to provide an adhesion (col. 15, lines 36-41).

As per claim 7 at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply titanium as recited in the claimed invention because Applicant has not disclosed that titanium as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Ananth et al. because titanium as recited in the claimed invention would perform equally well such as adhesion in Ananth et al. Therefore, it would have been an obvious matter of design choice to modify the adhesion material of Ananth et al. to obtain the invention as specified in claim 7.

As per claims 15 and 32 at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to provide the structure made by nitride as recited in the claimed invention because Applicant has not disclosed that the nitride structure as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Ananth et al. because the nitride structure as recited in the claimed invention would perform equally well such as the silicon carbide for the purpose of optimal bonding and matching thermal expansivity in Ananth et al. Therefore, it would

Art Unit: 3729

have been an obvious matter of design choice to modify the silicon carbide of Ananth et al. to obtain the invention as specified in claim 15.

As per claim 30 Ananth et al. also teach that the structure is extended to a position above the surface of the slider as shown in Fig. 4'.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ananth et al. in view of Tsukamoto, further in view of Carr et al. (US PAT. 5,761,790).

Ananth et al., modified by Tsukamoto, teach all of the limitations as set forth above, but fail to teach to form a carbon layer over the slider. Carr et al. teach a process of making a slider made by silicon material including a process of applying a carbon base material (606) over the slider (500) in order to protect the slider from the wear as shown in Fig. 6 (see also col. 2, lines 35-38). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating the slider of Ananth et al., modified by Tsukamoto, by a carbon base material over the slider as taught by Carr et al. in order to protect the slider from the wear.

Allowable Subject Matter

5. Claims 9-14 and 38 are allowed.

6. Claims 34-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-15 and 30-38 have been considered but are moot in view of the new ground of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

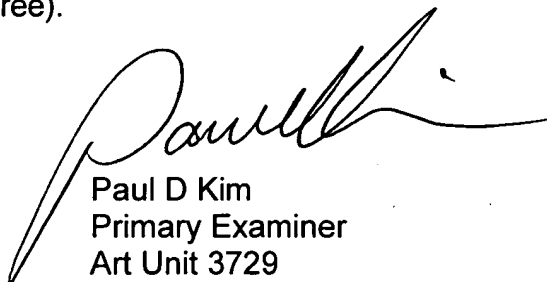
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Thursday between 6:00 AM to 2:00 PM.

Art Unit: 3729

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim
Primary Examiner
Art Unit 3729